

# A HUMPBAC WHALE, *MEGAPTERA NOVAEANGLIAE*, SKELETON DISCOVERED AT AN UNUSUAL LOCATION ON MORETON ISLAND, QUEENSLAND

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Bushing, V.C. 1991 07 01: A humpback whale, *Megaptera novaeangliae*, skeleton discovered at an unusual location on Moreton Island, Queensland. *Memoirs of the Queensland Museum* 30(2): 271–275. Brisbane. ISSN 0079-8835.

Chance discovery of a humpback whale, *Megaptera novaeangliae*, skeleton on Moreton Island is described. Its distance above and behind present high water mark poses conjecture as to the manner and timing of its deposition. Radiocarbon dating indicates that its age is less than 1500 years BP thus excluding the possibility of deposition during the last interglacial high sea level period. It is most likely that the whale was washed ashore during a cyclonic surge or other extreme weather conditions. □ *Humpback whale, Megaptera novaeangliae*, skeleton, Moreton Island, Queensland, radiocarbon dating.

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During a routine patrol on sand dunes behind Spitfire Creek (27°04'S, 153°27'E) on the eastern or oceanic shore of Moreton Island, on 29 October 1984, large animal bones were seen in a sandblow (Figs 1–4). At first they were considered to be those of a horse but closer inspection and hand-digging revealed large cetacean vertebrae.

The site was re-examined on 4 November 1984 and skeletal elements, including a maxillary tip, cervical, thoracic and caudal vertebrae as well as the sternum and ribs, were recovered. The skeleton was identified as that of a humpback whale when a radius, characteristic of the species, was located (Fig.5). The skeletal elements were deposited and registered (JM 5252) in the Queensland Museum and comparison with other Humpback Whale material in that collection (Paterson, 1986) indicated that they were those of an adult.

The skeleton lay in a SE/NW line in the sandblow which sloped to the northeast (Fig.6). The maxillary fragment and caudal vertebrae lay at the extreme northwest and southeast aspects of the site, respectively. The highest point of the sand dune in which the site was incorporated is 12.6 m and the midpoint of the skeletal deposit, from where the thoracic elements were recovered, is 4.8 m above and 190 m behind present high water mark.

During the last interglacial period, c. 120,000 yr BP (Flint, 1971) sea levels were approximately 5 m higher than at present. If the whale had stranded at that time it may have been located in

this position in normal weather conditions. Radiocarbon dating with correction for isotopic fractionation dates the skeleton at  $1410 \pm 70$  yr BP. However, its age may be substantially less because of depletion of  $C^{14}$  in the Antarctic oceanic water mass. This phenomenon is termed the reservoir effect and a correction is applicable to material of Antarctic origin (Omoto, 1983). Although Southern Hemisphere humpback whales spend considerable periods in temperate waters (Dawbin, 1966) their periods of rapid skeletal growth occur at the Antarctic feeding grounds (Matthews, 1937). Accordingly, reservoir effect correction of JM 5252 is required. Freshly killed seals and penguins in the Ross Sea had radiocarbon dates ranging between  $1750 \pm 70$  and  $1300 \pm 50$  yr BP (Omoto, 1983). It is clear that JM 5252 does not date from the interglacial period and other reasons for its location must be considered.

Anatomical distribution of skeletal elements in the sandblow excludes the remote possibility that they were relocated by humans from a site nearer to the sea. Forman et al., (1987) observed that whale bones are gradually scattered along the littoral zone by tide and weather action. The relatively undisturbed skeleton of JM 5252 suggests that it had not been subjected to further significant tidal action.

The Spitfire Creek depression is the last substantial breach in the present frontal dune system proximal to the Cape Moreton headland (Fig. 1) and the sea enters its easterly aspect in rough, southeast weather. In the winter of 1957 water



FIG.1. Spitfire Creek, Moreton Island. Cape Moreton is seen in the far right of the photograph. The sand-blow in which JM 5252 was found is in the centre of the photograph.

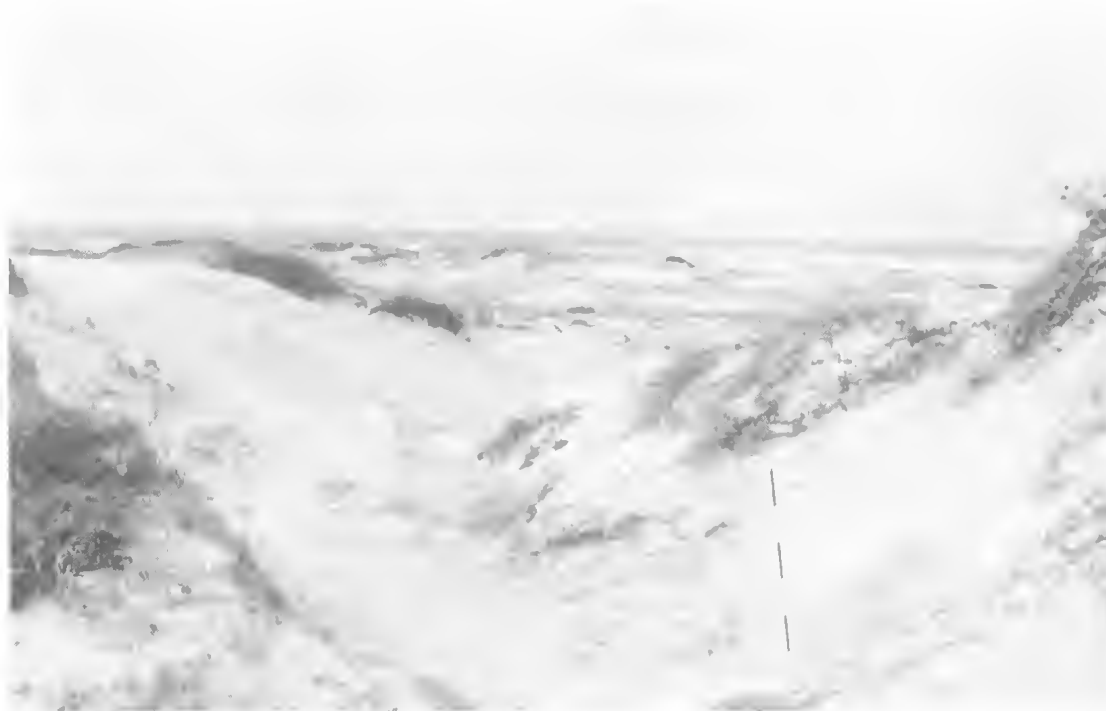


FIG.2. The sand-blow which contained JM 5252. A view seawards from its northwest aspect. The thoracic elements were recovered from the region of the marking stick.

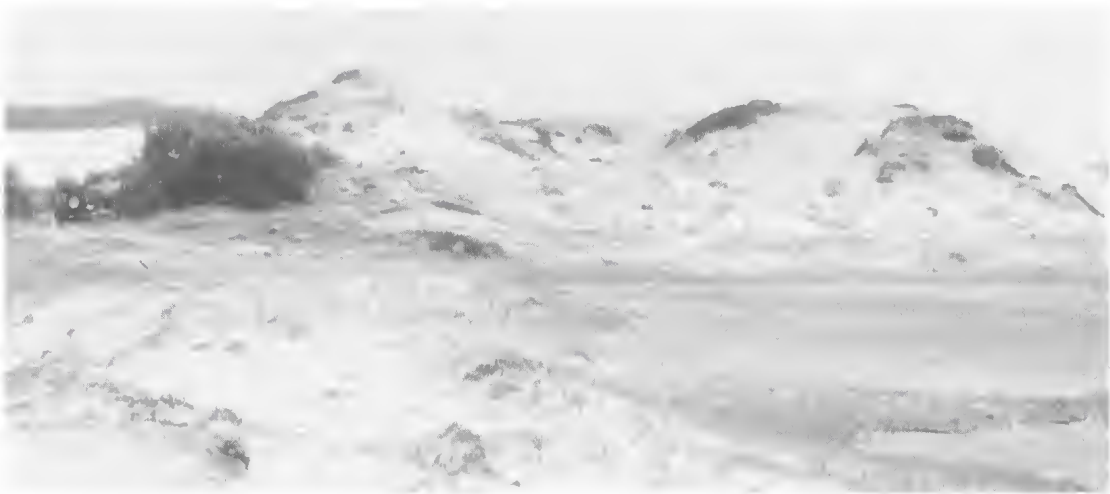


FIG.3. The sand-blow which contained JM 5252. A view from the present low frontal dunes to demonstrate the extent of the Spitfire Creek depression.



FIG.4. Skeletal elements of JM 5252 at the time of discovery.

was trapped to a depth of approximately 1.5m behind a barrier of logs and dune grass at the entrance to Spitfire Creek (R.A. Paterson, pers. comm.). This debris had accumulated during a prolonged period of rough weather associated with strong southeast winds.

Decomposing whales are extremely buoyant,

particularly if their integument is intact (Tønnessen and Johnsen, 1982). It is suggested that the most likely reason for the unusual location of JM 5252 is that its carcass was washed into the Spitfire Creek depression during cyclonic or other extreme weather conditions associated with abnormally high tides.



FIG.5. The radius of JM 5252 during excavation.

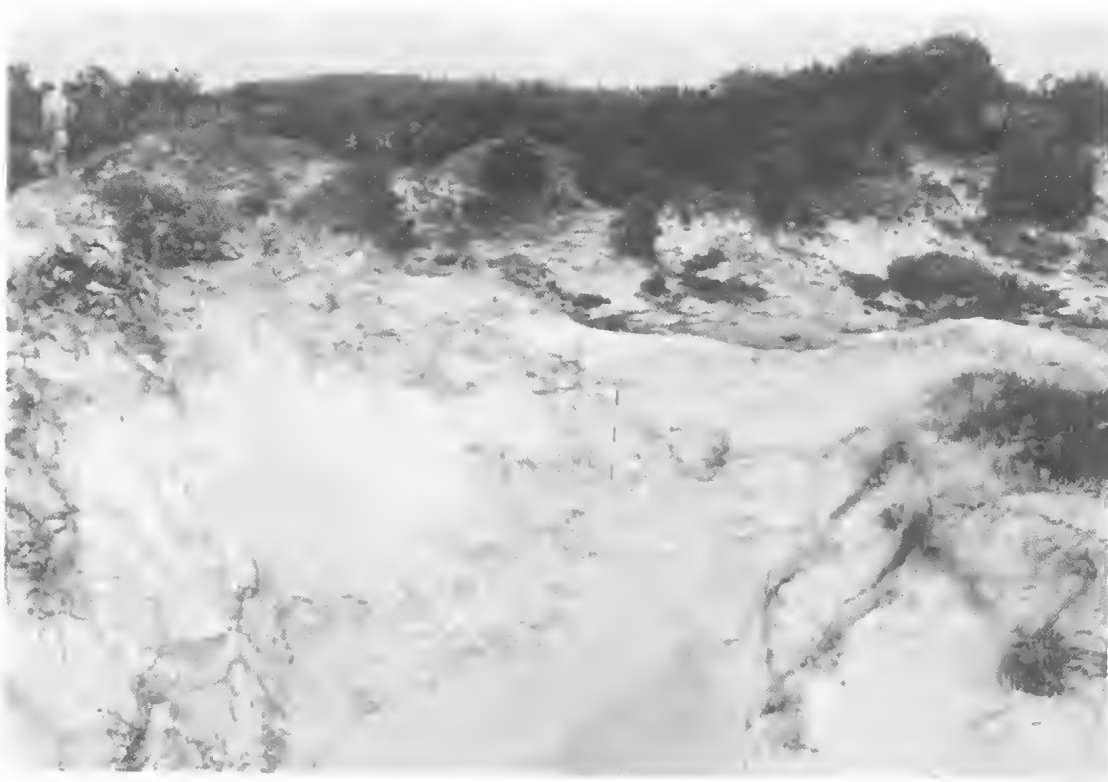


FIG.6. The sand-blow which contained JM 5252. Its northern aspect is to the right of the photograph.

## ACKNOWLEDGEMENTS

Peter Jell of the Queensland Museum kindly arranged for radiocarbon dating of JM5252 which was performed by Beta Analytic Inc. Ms Gillian Taylor of the N.W.G. MacIntosh Centre for Quaternary Dating kindly provided information concerning the Antarctic reservoir effect. Mr Neville Hawkins transported the skeletal material from Moreton Island and Dr Robert Paterson assisted with the excavation and identified the specimen.

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